

2. The inventorship has been corrected, as suggested by the Examiner.
3. The objection to the drawings is respectfully traversed. The drawing of Figure 6 has been amended. Because it is not possible to show the drawing correction in red in a facsimile (by which this Amendment is being filed), the corrections are hereby described: The only correction is the addition of reference number "52" to Figure 6. Reconsideration of the drawings is requested.
4. The rejection of claims 30 and 31 under 35 U.S.C. § 112, second paragraph, as being indefinite is respectfully traversed. The relevant claims have been amended to more particularly point out and distinctly claim the subject matter of the invention. Reconsideration is requested.
5. The rejection of claims 13-17, 22, 25-29, 32-36, 38, 39, 41, and 42 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,183,136 to Colla is respectfully traversed. The Examiner stresses the existence of a noble-metal-based bonding agent in Colla, but Colla does not include a noble-metal-based bonding agent, and in fact, does not include a bonding agent at all within the meaning of the present application.

In Colla, the noble metal is taught as being the termination plate, not a bonding agent as indicated by the Examiner. Colla discloses gold palladium or silver palladium, which is directly applied to the resistance member as the termination plate.

The term "bonding" in Colla is used to refer to the bonding nickel ink, which when screen printed on the substrate becomes the resistive element. Again, no bonding agent is disclosed to adhere a termination plate to the resistive element.

Further, Colla's invention could not be used in place of the claimed invention because it could not withstand the high temperatures necessary for injection molding. Also, Colla's invention lacks the mechanical strength to be used for the industrial

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purposes required of the claimed invention. The present invention teaches the use of stainless steel for the terminal plates. Colla does not involve a heater, and therefore the terminal plates of gold- or silver- palladium do not need to withstand the same heat or mechanical stresses the present invention is designed to handle. Colla simply does not involve analogous art. For these reasons, Applicants respectfully request reconsideration of Claims 13-17, 22, 25-29, 32-36, 38, 39, 41, and 42.

6. The rejection of claims 18, 19, and 37 under 35 U.S.C. § 103(a) as being unpatentable over Colla in view of Hoshizaki et al. is respectfully traversed. As stated earlier, Colla does not disclose a separate termination plate and noble-metal-based bonding agent. Therefore, while termination plates may be threaded studs, "L" shaped, or three end portions, Colla in view of Hoshizaki still does not disclose a noble-metal-based bonding agent used to bond a heating element and termination plate. Furthermore, as stated above, Colla is not analogous art to the present invention. For these reasons, Applicants respectfully request reconsideration of 18, 19, and 37.

7. The rejection of claim 20 under 35 U.S.C. § 103(a) as being unpatentable over Colla in view of Hochheimer et al. is respectfully traversed. As discussed earlier, Colla does not disclose a noble-metal-based bonding agent but instead discloses a termination plate which is directly attached to the heating element without the use of a separate bonding agent.

Further, Hochheimer does not teach of an ink based bonding agent comprised of silver, but instead teaches of a coating composition comprised of silver. Hochheimer does not disclose nor teach the use of the coating composition as a bonding agent. Therefore, the combination of Hochheimer and Colla does not teach a strong bonding agent comprised primarily of a noble metal that would strongly bind termination plates a

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heating element. Furthermore, as stated above, Colla is not analogous art to the present invention. For these reasons, Applicants respectfully request reconsideration of Claim 20.

8. The rejection of claim 21 under 35 U.S.C. § 103(a) as being unpatentable over Colla in view of Fujiyama et al. is respectfully traversed. As discussed earlier, Colla does not disclose a noble-metal-based bonding agent but instead discloses a termination plate which is directly attached to the heating element without the use of a separate bonding agent.

Further, Fujiyama does not teach of a way to strengthen the bond between a thick film heater and a metal but instead teaches how strengthen the bond between a thick film heater and a ceramic heater. It is not obvious that a bonding method that succeeds with a ceramic will succeed with a metal. Ceramic is significantly more porous than a metal and will affect the absorption of bonding agents. For these reasons, Applicants respectfully request reconsideration of Claim 21.

9. The rejection of claim 23 under 35 U.S.C. § 103(a) as being unpatentable over Colla in view of Solow is respectfully traversed. As discussed earlier, Colla does not disclose a noble-metal-based bonding agent but instead discloses a termination plate which is directly attached to the heating element without the use of a separate bonding agent. Therefore, the combination of Colla and Solow cannot disclose a noble-metal-based bonding agent that bonds a termination plate to a dielectric protected heating element. For these reasons, Applicants respectfully request reconsideration of Claim 23.

10. The rejection of claims 24 and 41 under 35 U.S.C. § 103(a) as being unpatentable over Colla in view of Glicksman et al. is respectfully traversed. As discussed earlier, Colla does not disclose a noble-metal-based bonding agent but instead discloses a termination

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plate which is directly attached to a heating element without the use of a separate bonding agent.

Further, Claim 24 does not claim that the bonding agent must be silver palladium, instead Claim 24 claims a noble-metal-based bonding agent that has a melting point of at least 900 degrees. The noble-metal-based bonding agent of the claimed invention does not have to be silver but could be any other noble metal. The silver bonding agent as taught in the claimed invention is just the preferred embodiment.

Similarly, Claim 41 does not specify the melting point of the bonding agent. In fact, the claims do not specify a melting point for the silver palladium bonding agent of the preferred embodiment. Additionally, while Colla is not analogous art to the present invention, as stated above, Glicksman is all the more so non-analogous. Glicksman relates solely to the manufacture of chemical reagents. One of ordinary skill in the art of electrical resistance heaters would not be expected to be familiar with the teachings of Glicksman. For these reasons, Applicants respectfully request reconsideration of Claims 24 and 41.

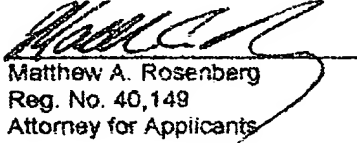
11. Whereas the Examiner's rejections have been overcome and all of the Examiner's suggestions satisfied, Applicants respectfully request that the application be passed to issue.

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No additional fee is due.

Respectfully submitted,


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APPENDIX A
UNMARKED VERSION OF THE AMENDED CLAIMS

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30. (Amended) The method of claim 13, further comprising a final step of firing the bonding agent until the bonding agent has sintered thereby forming a bond between the terminal plate and the heating element.
31. (Amended) The method of claim 30, wherein the final step takes place between 700°C and 900°C.
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